44696

National Library of Canada | Bibliothèque nationale du Canada

Canadian Theses Division | Division des thèses canadiennes

Ottawa, Canada
K1A 0N4

PERMISSION TO MICROFILM — AUTORISATION DE MICROFILMER

• Please print or type — Écrire en lettres moulées ou dactylographier

Full Name of Author — Nom complet de l'auteur

Leonardus Hubertus Beelen

Date of Birth — Date de naissance

06/02/53

Country of Birth — Lieu de naissance

Netherlands

Permanent Address — Résidence fixe

#4, 6318 – 58 Ave.

Red Deer, Alberta

Title of Thesis — Titre de la thèse

Depressive Affect: Experimental Study of Beck's Cognitive and Lewinsohn's Behavioral Theories

University — Université

University of Alberta

Degree for which thesis was presented — Grade pour lequel cette thèse fut présentée

M.A.

Year this degree conferred — Année d'obtention de ce grade

1980

Name of Supervisor — Nom ~~du~~ directeur de thèse

Dr. T. Wechowicz

Permission is hereby granted to the NATIONAL LIBRARY OF CANADA to microfilm this thesis and to lend or sell copies of the film.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

L'autorisation est, par la présente, accordée à la BIBLIOTHÈQUE NATIONALE DU CANADA de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans l'autorisation écrite de l'auteur.

Date

May 13, 1980

Signature

Leonardus Beelen

NL-91 (4/77)

National Library of Canada
Collections Development Branch

Canadian Theses on
Microfiche Service

Bibliothèque nationale du Canada
Direction du développement des collections

Service des thèses canadiennes
sur microfiche

NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us a poor photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30. Please read the authorization forms which accompany this thesis.

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de mauvaise qualité.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30. Veuillez prendre connaissance des formules d'autorisation qui accompagnent cette thèse.

THIS DISSERTATION
HAS BEEN MICROFILMED
EXACTLY AS RECEIVED

LA THÈSE A ÉTÉ
MICROFILMÉE TELLE QUE
NOUS L'AVONS REÇUE

Ottawa, Canada
K1A 0N4

NL-339 (Rev. 8/80)

THE UNIVERSITY OF ALBERTA

DEPRESSIVE AFFECT: EXPERIMENTAL STUDY OF BECK'S COGNITIVE AND LEWINSOHN'S BEHAVIORAL THEORIES

by

© LEONARDUS H. BEELEN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF ARTS

DEPARTMENT OF PSYCHOLOGY

EDMONTON, ALBERTA

SPRING, 1980

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled DEPRESSIVE EFFECT: EXPERIMENTAL STUDY OF BECK'S COGNITIVE AND LEWINSOHN'S BEHAVIORAL THEORIES submitted by Leonardus H. Beelen in partial fulfilment of the requirements for the degree of Master of Arts.

T. Weckowicz
Supervisor

Date April 3, 1980

Abstract

Female college students were given positive self-evaluative statement, negative self-evaluative statements, a high rate of positive reinforcement, a low rate of positive reinforcement, or no pretreatment. Next, they were administered the Multiple Affect Adjective Check List (MAACL) and the Beck Depression Inventory (BDI) and tested on a series of 20 patterned anagrams. Neither the behavioral manipulation nor the cognitive manipulation influenced significantly the performance on the anagram task or the scores on the BDI. However, the negative self-evaluative statements resulted in significantly higher anxiety, depression, and hostility scores as measured by the MAACL than did no pretreatment. It appears that female college students are affected negatively by a lowering of their self-esteem but are not as affected positively by a raising of their self-esteem. These results lend some support to Beck's cognitive theory of depression but no support to Lewinsohn's behavioral theory of depression.

Acknowledgments

I would like to thank my advisor, Dr. T. Weckowicz, for suggesting various topics for my thesis and helping me arrive at the topic chosen. I would also like to thank Dr. T. Weckowicz and Dr. B. K. Sinha, members of my Thesis Committee, for reviewing and making constructive criticisms of the early drafts of my thesis. I would like to thank Dr. Hopkinson for serving as a member of my Thesis Committe. I thank my patient and understanding wife, Judy, for her assistance in the typing and proof-reading of the drafts of the thesis. Finally, I thank Gloria Kroeker for typing the final draft of the thesis.

TABLE OF CONTENTS

PAGE

Introduction..... 1

Beck's Cognitive Theory of Depression..... 1

Lewinsohn's Behavioral Theory of Depression..... 4

Comparison of Beck's and Lewinsohn's theories..... 7

Hypotheses..... 9

Method.....10

Subjects.....10

Apparatus.....11

Procedure.....12

Results.....15

Discussion.....22

References.....42

Appendix 1: List of Self-Evaluative Statements.....47

Appendix 2: List of Words Used in the Reinforcement Task.....52

Appendix 3: List of Anagrams Used in the Study.....53

Appendix 4: Debriefing Instructions.....54

LIST OF TABLES

Table		Page
1.	Experimental Design	27
2.	Analysis of Variance Summary Table for the Self-Esteem Ratings	28
3.	Mean Self-Esteem Rating and Standard Deviations	29
4.	Analysis of Variance Summary Table for the BDI Initial Scores	30
5.	Analysis of Variance Summary Table for the BDI Post Treatment Scores	31
6.	Analysis of Variance Summary Table for the BDI Difference Scores	32
7.	Mean Beck Depression Inventory Scores and Standard Deviations	33
8.	Analysis of Variance Summary Table for the Anxiety Score of the MAACL	34
9.	Analysis of Variance Summary Table for the Depression Score of the MAACL	35
10.	Analysis of Variance Summary Table for the Hostility Score of the MAACL	36
11.	Mean Multiple Affect Adjective Check List Scores and Standard Deviations	37
12.	Analysis of Variance Summary Table for the Mean Response Latency Measure	38
13.	Analysis of Variance Summary Table for the Trials to Criterion Measure	39
14.	Analysis of Variance Summary Table for the Number of Failures Measure	40
15.	Mean Anagram Task Scores and Standard Deviations	41

Depressive Affect: Experimental Study of Beck's Cognitive and Lewinsohn's Behavioral Theories

The phenomenon of depression has been described and studied from many diverse perspectives and viewpoints. This paper will be concerned with Beck's cognitive theory and Lewinsohn's behavioral theory.

According to Beck (1972) the phenomena of depression may be divided into five categories: (1) affective manifestations-- a specific alteration in mood such as sadness, loneliness, or apathy; (2) cognitive manifestations-- negative self-concept associated with a disposition to interpret experiences in a negative way and to expect negative outcome of the future; (3) motivational manifestations--desire to escape, to avoid interpersonal contacts, or to commit suicide, and loss of spontaneous motiation; (4) vegetative manifestations--anorexia, fatigability, insomnia, loss of libido; (5) changes in motor behavior-- retardation or agitation. Beck (1963) proposes a model of depression composed of interlocking cognitive, affective, and motivational structures. In this model a primary position was assigned to the distorted concepts of the self (low self-esteem), of the outside world, and of the future (pessimism). These three distorted concepts were labeled the "cognitive triad". The other phenomena of depression were assigned positions as dependent variables.

Beck (1972) postulates that in depression a primitive or immature rigid cognitive organization becomes dominant. This primitive organization is composed of relatively crude concepts (schemes) which are framed in absolute rather than relative terms, are dichotomous rather than graduated, and are global rather than discriminative. This primitive organization preempts the more mature system in areas of experience

relevant to self-evaluation and the expectancy of future events, as depression develops. Depressed mood, loss of spontaneity, and suicidal wishes are conceptualized as the logical outcome of the depressed patient's unrealistic negative view of himself, his world, and his future. Loss of appetite and sleep disturbance are regarded as the physiological correlates of the depressed state. The depression goes into a downward spiral as a result of a chain reaction that feeds upon itself (Beck, 1974). Once the person becomes aware of his dysphoria, dependency, and retardation in behavior and thinking, this awareness reinforces his negative expectations and lowered self-image.

Beck's theory of depression was initiated by his clinical observations of patients and elaborated upon through correlational and experimental studies of depressed patients. Some studies (Lishman, 1972; Lloyd & Lishman, 1975; Mischel, Ebbesen, & Zeiss, 1973; Nelson & Craighead, 1977) indicate that depressed individuals show a special readiness to attend to negative aspects of situations. Loeb, Beck, and Diggory (1971) examined the effects of experimentally induced success and failure on depressed and nondepressed patient's performance on a timed card-sorting task. Although the actual output of the depressed subjects was as good as that of the control group, they had negative expectancies and gave negative evaluations of their performance.

Ludwig (1975) found that depression could be induced in undergraduate women by presenting feedback indicating that the individual was immature and uncreative. Thus, lowering the person's beliefs regarding her own worth (self-esteem) resulted in depression.

Velten (1968) instructed subjects to read and concentrate upon self-referent statements which were intended to be elating or which were intended to be depressing and induced elation and depression, respectively.

Strickland, Hale and Anderson (1975) designed a study, based on Velten's methodology, to test the influence of positive and negative effect induced by cognitive mediation on behavior thought to reflect depression. Subjects in a positive, in contrast to a negative, affect group reported themselves to be less depressed, anxious, and hostile; were more likely to wish to engage in social, active endeavors; and were more expansive in graphic expression. Hale and Strickland (1976) carried out a similar study and found that subjects in the elated group, in contrast to the depressed group, performed better on the digit symbol test, were less despressed as measured by a depression adjective check-list, wrote faster, and were more expansive in graphic expression.

Coleman (1975) conducted an experiment to test Beck's contention that self-esteem is a determinant of elation or depression. He adapted Velten's (1968) methodology by having subjects read self-evaluative statements designed to induce positive or negative self-esteem. The subjects selected for the experiment were those who scored at the extremes of the range of two self-report measures of the elation-depression continuum. It was found that under the influence of the self-evaluative statements elated and depressed subjects were able to shift to opposite mood states. The study suggests that self-evaluative statements are a determinant of depression.

Teasdale and Rezin (1978) in two studies of depressed patients reduced for brief intervals the frequency of naturally occuring negative thoughts and examined the consequent effect on mood. The results of the first study were consistent with a cognitive model of depression such as for instance that of Beck (1967) which predicted that reducing the frequency of negative thoughts would reduce depressed mood. Further

it was found that correlations between thought frequency and subsequent mood were large and significant, whereas correlations between mood and subsquent thought frequency were small and non-significant. This suggests that thoughts cause mood states rather than vice versa. In the second study the same procedure produced reduction in negative thoughts which was individually significant for seven of thirteen depressed patients, and also significant for the thirteen patients as a group. However, this led to little improvement in the depressed mood. This negative finding could be due to the limited thought reduction which was achieved.

In contrast to that of Beck, Lewinsohn's theory of depression represents an attempt to conceptualize depression within a learning theory framework. There are four major assumptions underlying Lewinsohn's approach to depression (Lewinsohn, Weinstein, & Shaw, 1969). The first assumption is that a low rate of positive reinforcement acts as an unconditional stimulus for dysphoria and other cognitive and affective manifestations of depression. The second assumption is that a low rate of positive reinforcement constitutes a sufficient explanation for other parts of the depressive syndrome such as the low rate of activity and verbal behavior. The third assumption is that the social environment provides reinforcements in the form of sympathy, interest, and concern which strengthen and maintain depressive behaviors. These reinforcements are typically provided by a small segment of the subjects' social environment such as his immediate family. However, since most people find his behaviors aversive, they will avoid him as much as possible. This decreases the rate of positive reinforcement and further accentuates his depression. The fourth assumption is that a number of differant environmental events (eg., loss through death, rejection, misfortune) and person-

ality characteristics (eg.,lack of social skill, ignorance) cause a state of low positive reinforcement. An area of deficit viewed as especially important in the development of depressive behaviors is that of social skill. Social skill is defined as the emission of behaviors which are positively reinforced by others.

Lewinsohn (1974) has suggested three ways in which a low rate of response contingent positive reinforcement may occur. First, events which are contingent on behavior may not be reinforcing, which could be due to a loss of reinforcer effectiveness. Second, events which are reinforcing may become unavilable. Third, reinforcers may be available, but because of the lack of the necessary repertoire of skills the individual is unable to elicit them. The latter is particularly important in the area of social behavior.

Libet and Lewinsohn (1973) tested the general hypothesis that depressed persons, as a group, are less socially skillful than non depressed individuals. In this study social skill was defined as the complex ability both to emit behaviors that are positively reinforced and not to emit behaviors that are punished by others. The results were generally consistent with the hypothesis, in showing depressed subjects to be lower than controls on a number of operational measures of social skill (i.e. activity level, interpersonal range, rate of positive reactions emiteed, and action latency).

Wener and Rehm (1975) report a study which tested some hypotheses related to Lewinsohn's theory. They found that a low rate of positive reinforcement (20%) on a pseudo-social intelligence task resulted in more depressive behavior as measured by the Multiple Affect Adiective Check List, self-confidence ratings, and response latencies as compared to sub-

jects given a high rate (80%) of positive reinforcement. Also, it was found that more depressed subjects were influenced more by experimental manipulation.

Rehm (1978) assessed the relationship between mood and both pleasant and unpleasant events. It was found that both pleasant and unpleasant events correlated with mood. The correlations with unpleasant events were regularly of a lesser magnitude, but they made a significant additional contribution to mood.

Hammen and Glass (1975) report two studies which do not support Lewinsohn's theory. In the first study mildly to moderately depressed individuals were assigned either to a group instructed to increase their frequency of pleasant activities during a two week period or to one of three control groups. Although the subjects who were asked to increase their activities apparently did so, they did not show a greater reduction of depression than the control groups. In the second study, involving a similar design, increased-activity subjects reported more depression at post-test than did the controls. Also, this group, although reporting a greater frequency of activities, reported a smaller frequency of "very enjoyable" activities. Lewinsohn (1975) in commenting on these two studies states that (a) many activities were included in the "pleasant" category from which the individual had not in fact derived pleasure or which were not mood relevant for that individual, and that (b) in only a subset of depressed individuals would one expect the predicted effect to obtain, namely those "in whom there is a significant association between activity level and mood" and "whose base-level pleasant-activity level is low" (p. 730). Blaney (1977) states that "these comments (by Lewinsohn) suggest a retreat in Lewinsohn's position that would render

it irrefutable and thus unacceptable" (p.212).

Beck's and Lewinsohn's theories of depression differ fundamentally. Whereas Beck assigns a primary position to the distorted concepts of the self, the outside world, and the future, Lewinsohn assumes that the cognitive aspects of depression are a consequence of a low rate of response-contigent positive reinforcement. He argues that the depressive phenomena can be dealt with without recourse to the cognitive aspects, but instead with reliance on learning principles which focus on the behavior.

The Velten (1968) mood induction procedure has been used in several studies supporting cognitive self-evaluation theories of depression. Its effectiveness has been attributed to the self-devaluative nature of its statements. Frost, Graf, and Becker (1979) carried out a study which supported the alternative hypothesis that suggestions of somatic states characteristic of depression (such as fatigue, sleepiness and exhaustion), which are found in nearly half of Velten's depression statements, account for the effectiveness of the procedure. This finding limits the support studies based on Veltn's mood induction procedure offer to self-evaluation theories of depression. This limitation is not applicable to the present study because only two of the sixty positive statements and only four of the sixty negative statements suggest somatic states rather than self evaluations.

The previously mentioned studies using mood induction procedures seem to undercut Lewinsohn's anticognitive stand, since they appear to act on the mood through cognition (Strickland, Hale, and Anderson, 1975; Hale and Strickland, 1976; Coleman, 1975). They provide support for the cognition to behavior direction of influence. In each of these studies

a cognitive manipulation resulted in behavioral changes as measured by a digit symbol test, a number-writing speed test, an anagrams task, and a test of graphic expression. However, the reverse direction of influence might also be obtained, that is, from behavior to cognition. In a study carried out by Flippo and Lewinsohn (1971) depressed and nondepressed subjects were given a puzzle-solving task on which one of three failure conditions was possible (25%, 50%, or 75%). Both before and after this task each subject completed equivalent forms of a self-esteem measure. The 50% and the 75% failure conditions resulted in negative change in self-esteem for all groups, but the depressed groups self-esteem ratings were generally more negative than those of the nondepressed groups. This study supports a behavior to cognition direction of causation. However, the magnitude of change for the two groups was similar and the interaction of depression level with failure condition was not statistically significant. In the previously mentioned study by Wener and Rehm (1975) subjects were given either a high (80%) or a low (20%) rate of positive reinforcement on a pseudosocial intelligence task. This behavioral manipulation resulted in more depressive behavior as measured by the Multiple Affect Adjective Check List, self-confidence ratings, and response latencies.

Turner, Ward, and Turner (1979) designed a study to evaluate directly Lewinsohn's treatment methods. Depressed subjects were assigned randomly to an activity-increase group or one of three control groups. All subjects displayed some improvement in the mood, but the activity-increase group showed significantly greater improvement than subjects in groups that did not increase their activity levels.

Shaw (1977) evaluated the therapeutic efficacy of Beck's cognitive

treatment and Lewinsohn's behavioral treatment of depression. The cognitive modification group showed significantly fewer depressive symptoms after treatment than all the other groups. The behavior modification and non-directive procedures were more effective than no treatment as assessed by the self-report data.

The present study attempted to experimentally test and compare Beck's cognitive theory and Lewinsohn's behavioral theory of depression. Five groups of subjects scoring low on the Beck Depression Inventory were used. The first group was given positive self-evaluation statements, the second negative ones, the third was given a high rate of positive reinforcement, and the fourth a low one. The fifth group served as a control. The dependent variables for all five groups were: the scores on the Depression Scale of the Multiple Affect Adjective Check List, the performance on an anagram task, and a change in the scores on the Beck Depression Inventory. The prediction following from Beck's cognitive theory is that the positive and negative self-evaluation statements would affect the depression and anagram scores in a positive or negative way, respectively. On the other hand, Lewinsohn's behavioral theory would predict a positive or negative affect of the high or low rate of reinforcement on the dependent measures. Detailed predictions from Beck's cognitive theory are as follows:

1. The subjects given positive self-evaluation statements will score lower on the Depression Scale of the MAACL and on the BDI than the controls. Their anagram performance will be better than that of the controls.
2. The subjects given negative self-evaluation statements will

score higher on the Depression Scale of the MAACL and on the BDI than the controls. Their anagram performance will be worse than that of the controls.

3. The subjects in the high and low rate of positive reinforcement groups will not differ on the dependent measures from the controls.

Detailed predictions from Lewinsohn's behavioral theory are as follows:

1. The subjects given a high rate of positive reinforcement will score lower on the Depression Scale of the MAACL and on the BDI than the controls. Their anagram performance will be better than that of the controls.
2. The subjects given a low rate of positive reinforcement will score higher on the Depression Scale of the MAACL and on the BDI than the controls. Their anagram performance will be worse than that of the controls.
3. The subjects in the positive and negative self-evaluation groups will not differ on the dependent measures from the controls.

Method

Subjects

The subjects were fourty nondepressed female University of Alberta undergraduate students who participated to fulfill course requirements. Potential subjects were given the Beck Depression Inventory (BDI; Beck 1967). Bumberry, Oliver, and McClure (1978) investigated the utility of the BDI for survey use in a college population. The Pearson product-moment correlation coefficient between the BDI and a psychiatric rating was .77, indicating that the BDI is a valid instrument for use in a college population. The mean BDI score for college students found by

Miller and Seligman (1973) was used as the cut-off point. Subjects who received BDI Scores of 8 or lower were used as subjects in the experiment. Subjects were randomly assigned to one of five groups. See Table 1 for a summary of the experimental design. There were eight subjects per group.

Insert Table 1 about here

Apparatus

Experimental manipulations (independent variables):

Self-evaluative statements. Sixty positive and sixty negative self-evaluative statements were used. Each statement was typed separately on a 5 x 8 inch (12.70 x 20.32 cm.) index card. Subjects were exposed to each statement for 20 seconds. Examples of positive statements are "I am a likealbe person" and "I am full of energy and ready to tackle anything". Examples of negative statements are "I can't seem to do anything right" and "there is no one I can really call my friend". (See Appendix 1 for a complete list of statements used).

Rate of positive reinforcement. The task involving a high and low rate of positive reinforcement was identical to that used by Wener and Rehm (1975) who selected 100 words from the word association lists of Bilodeau and Howell (1965), Palermo and Jenkins (1963), and Rapaport, Gill, and Schafer (1946). The subject is asked to guess the most common associates: In fact, the words are chosen so that each has two words with approximately equal high probabilities of association. This is done to enhance the possibility of giving subjects feedback that appears plaus-

ible but is actually delivered on a predetermined schedule. A high versus a low rate of reinforcement can thus be manipulated as an independent variable. This task was presented to the subject as a test of social intelligence and more specifically the aspect entitled "interpersonal empathy", the ability to know what others are thinking and feeling. The deception was necessary for two reasons. First, it contributed to the ego-involvment in the task. An ego-involvement in the task has been found to be an important variable which increases the likelihood of helplessness effects (Roth and Kubal, 1975). Second, the deception was necessary to make the task analogous to Lewinsohn's account of depression. Lewinsohn emphasizes the concept of social skill and social reinforcement in his behavioral approach to depression. He states that the area of deficit viewed as especially important in the development of depressive behaviors is that of social skill. (See Appendix 2 for a list of the words used).

Test task (dependent variables):

Anagrams. An anagrams task similar to that developed by Hiroto and Seligman (1975) was used. The task consisted of twenty patterned, five-letter anagrams which were presented seperately on 4 x 6 inch (10.20 X 15.30 cm) index cards. The letter order for all the anagrams was 3-4-2-5-1. (See Appendix 3 for a list of the anagrams used.)

Multiple Affect Adjective Check List (MAACL). The Multiple Affect Check List (Zuckerman, Lubin, and Robins, 1965) was administered to elicit self-reports of depression, anxiety, and hostility.

Procedure

The subject was seated at a desk and administered the Beck Depression Inventory (BDI). Subjects obtaining a score of eight or less were included in the study and randomly assigned to one of the five groups.

Experimental manipulation:

Subjects in the positive and negative self-esteem conditions read a set of instructions to prepare themselves to receive the self-evaluative statements. The instructions consisted of teaching the subject to "talk herself into" an idea. The instructions for this task were:

> First I will read silently the statement. Next, I will read aloud the statement. I will repeat the words over and over, or I will visualize a scene based on the statements, or I will repeat the statement and visualize a scene. I will be able to talk myself into the idea or attitude expressed in each statement. Are there any questions?

Following the instructions, the positive and negative group subjects received the appropriate set of sixty self-evaluative statements. Subjects were given the entire deck of index cards and proceeded from statement to statement on a signal from the experimenter. Subjects were exposed to each statement for twenty seconds.

Subjects in the low reinforcement and high reinforcement conditions were asked to listen carefully to the following instructions:

> The purpose of this study is to investigate the general ability known as social intelligence. It has been shown that persons rating high on this ability are potentially more successful in their interpersonal relationships than are those who do not have a high rating. This study is concerned with that specific part of social intelligence called "interpersonal empathy", the ability to know what others are thinking and feeling. You will be presented with a word on an index card. Your task will be to say aloud the word which most people would associate to this presented word. It is import-

ant to remember that this word will not necessarily be the one which you would associate to it, but the one which most people would associate to it. For example, if the presented word is "needle", your correct response will be "thread" since most people associate "thread" with "needle". The correctness of the response is based on the associations of over 1,500 people. If your response is correct, I will say "correct". If your answer was not correct, we will merely go on to the next word. Remember, the correct association is not necessarily the one which you would make but the one which most people would give. Finally, you might find it helpful to use my feedback to improve your response as we go through the words. Are there any questions?

The experimenter then presented the 100 stimulus words, one at a time. In the high-reinforcement condition, subjects were reinforced as correct four of every five trials, whereas subjects in the low-reinforcement condition were reinforced as correct on only one of every five trials.

Subjects in the control condidtion received no experimental manipulation but proceeded immediately to the test phase.

Testing phase:

Subjects in the positive and negative self-esteem conditions and subjects in the control condition were asked to rate their self-esteem. A seven point rating scale was used. This was done to verify that the experimental manipulation based on Beck's theory did affect the subjects' self-esteem.

All subjects were administered the MAACL and the BDI. This was followed by an anagrams task. The instructions for this task were:

As you know anagrams are words with their letters scrambled and

your task is to unscramble the letters so that they form a word. When you think you know the word tell me what it is, and I'll tell you if you're right or wrong. Now there may be a pattern or principle by which you can solve the anagrams, but this is up to you to figure out. Are there any questions?

The subjects were given 20 anagrams and allowed 100 seconds to solve each one. Response lactencies were measured with an electric timer. Measures obtained from the anagrams were: (a) mean response latency for the 20 anagrams; (b) number of trials to criterion for anagram solution, defined as three successive trilas with a response latency less than 15 seconds; (c) number of failures to solve, defined as the number of trials with latencies of 100 seconds; and (d) the number of successful anagram solutions that occured prior to reaching criterion for learning the pattern.

Following the anagram task, all subjects were asked to rate their performance on the task relative to others. The rating was done on a five-point scale.

After the experiment all subjects were completely debriefed, thanked for their participation, and requested not to discuss the study with other subjects. (See Appendix 4 for the complete debriefing instructions).

Results

The self-esteem ratings were initally analyzed by means of a one-way analysis of variance where the independent variable was the experimental manipulation given (positive self-evalutive statements, negative self-evaluative statements, and control). The results are presented in Table 2. A significant effect was obtained, $F(2, 21) = 8.89$, $p < .01$.

Insert Table 2 About here

Next, Dunnett's (1955) test was used to test each of the two treatment means for significance by comparison with the control mean. Both comparisons were significant. To be significant the difference between the treatment mean and the control mean, $\bar{x}_{k.} - \bar{x}_{o}$, had to be greater or equal to 1.13. The actual differences were: (1) positive statements group minus control group equals 1.20 and (2) negative statements group minus control group equals -1.17. The mean scores and standard deviations are presented in Table 3. These results indicate that the experimental manipulation based on Beck's theory did affect the subjects' self-esteem.

Insert Table 3 About here

The BDI initial scores, the BDI post treatment scores, the BDI difference scores, the three MAACL scores, and three of the anagram task scores were analyzed by means of one-way analyses of variance where the independent variable was the experimental manipulation given (high rate of reinforcement, low rate of reinforcement, positive self-evaluative statements, negative self-evaluative statements, and control). The results for the BDI scores are presented in Tables 4, 5, and 6. There was no significant effect for the BDI initial score, F (4, 35) = 1.02. This indicates that the groups did not differ on the initial depression score.

Insert Table 4 About here

There was no significant effect for the BDI post score, F (4, 35) = 2.43.

Insert Table 5 About here

The BDI difference score was also not significant, F (4, 35) = 1.90.

Insert Table 6 About here

The mean scores and standard deviations are presented in Table 7.

Insert Table 7 About here

The MAACL scores were all significant. The results are presented in Tables 8, 9, and 10. For the anxiety score F (4, 35) = 5.54, $p < .005$.

Insert Table 8 About here

For the Depression score F (4, 35) = 3.82, $p < .025$.

Insert Table 9 About here

For the Hostility score F (4, 35) = 8.07, $p < .005$.

Insert Table 10 About here

The mean scores and standard deviations are presented in Table 11.

Insert Table 11 About here

One of the anagram measures, that is, the number of successful anagram solutions before the subject reaches the criterion, was not used because 23 of the 40 subjects failed to reach the criterion. Also, the performance rating on the anagram task was not analyzed because it was felt that the results were confounded by two different but inseparable factors. Any differences between groups on this measure could be due to the type of experimental manipulation received and/or by how the subjects actually performed on the anagrams. None of the anagram task measures which were used were significant. The results are presented in Tables 12, 13, and 14. For the Mean Response Latency measure F (4, 35) = .78.

Insert Table 12 About here

For the Trials to Criterion measure F (4, 35) = .45.

Insert Table 13 About here

For the Number of Failures measure $\underline{F}$ (4, 35) = .51.

Insert Table 14 About here

The mean scores and standard deviations are presented in Table 15.

Insert Table 15 About here

In addition to analyses of variance, Dunnett's (1955) test was used to test each of the four treatment means for significance by comparison with the control mean. For the BDI Initial score none of the comparisons between the treatment means and the control mean were significant. To be significant the difference between the treatment mean and the control mean, $\bar{x}_{k.} - \bar{x}_{0}$, had to be greater or equal to 3.43. The actual differences were: (1) positive statements group minus control group equals -.25, (2) negative statements group minus control group equals .75, (3) high rate of reinforcement group minus control group equals 1.00, and (4) low rate of reinforcement group minus control group equals -1.38. This indicates that the groups did not differ on their initial depression score.

For the BDI Post score none of the comparisons between the treatment means and the control means were significant. To be significant the difference between the treatment mean and the control mean had to be greater or equal to 10.95. The actual differences were: (1) positive statements group minus control groups equals -3.13, (2) negative statements group minus control group equals 8.25, (3) high rate of reinforce-

ment group minus control group equals -1.75, and (4) low rate of reinforcement group minus control group equals -2.38. Thus neither Beck's theory nor Lewinsohn's theory is supported.

For the BDI Differencescore none of the comparisons between the treatment means and control mean were significant. To be significant the difference had to be greater or equal to 11.39. The actual differences were: (1) positive statements group minus control group equals 2.88, (2) negative statements group minus control group equals -7.50, (3) high rate of reinforcement group minus control group equals 2.75, and (4) low rate of reinforcement group minus control group equals 1.00. Thus neither Beck's theory nor Lewinsohn's theory is supported.

For the Anxiety, Depression and Hostility scores of the MAACL measure only the differences between the negative statements group and the control group were significant. This result gives some support to Beck's theory. To be significant the difference between the treatment means and the control mean for the Anxiety score had to be greater or equal to 5.12. The actual differences were: (1) positive statements group minus control group equals -3.38, (2) negative statements group minus control group equals 5.75, (3) high rate of reinforcement group minus control group equals .50, and (4) low rate of reinforcement group minus control group equals .25.

For the Depression score the difference had to be greater or equal to 9.91 and the actual differences were: (1) positive statements group minus control group equals -3.12, (2) negative statements group minus control group equals 10.88, (3) high rate of reinforcement group minus control group equals .63, and (4) low rate of reinforcement group minus control group equals 2.13.

For the Hostility score the difference had to be greater or equal to 3.67 and the actual differences were: (1) positive statements group minus control group equals -.38, (2) negative statements group minus control group equals 6.75, (3) high rate of reinforcement group minus control group equals 2.12, and (4) low rate of reinforcement group minus control group equals 1.87.

None of the comparisons for any of the Anagram measures were significant and thus neither Beck's theory nor Lewinsohn's theory receive any support. For the Mean Response Latency score the difference between the treatment mean and the control mean had to be greater or equal to 25.14, The actual differences were: (1) positive statements group minus control group equals 1.82, (2) negative statements group minus control group equals -5.78, (3) high rate of reinforcement group minus control group equals -13.48, and (4) low rate of reinforcement group minus control group equals -6.35.

For the Trials to Criterion score the difference had to be greater or equal to 9.13. The actual differences were: (1) positive statements group minus control group equals -2.63, (2) negative statements group minus control group equals -2.88, (3) high rate of reinforcement group minus control group equals -4.63, and (4) low rate of reinforcement group minus control group equals -3.13.

For the Number of Failures score the difference had to be greater or equal to 5.30. The actual differences were: (1) positive statements group minus control group equals .00, (2) negative statements group minus control group equals -.63, (3) high rate of reinforcement group minus control group equals -2.38, and (4) low rate of reinforcement group minus control

group equals -1.50.

Discussion

The results presented above show limited support for Beck's cognitive theory of depression but no support for Lewinsohn's behavioral theory of depression. In regard to the hypotheses mentioned in the introduction of this paper it can be said that hypotheses (1), (2), and (3) based on Lewinsohn's theory were not supported. Subjects given a high rate of reinforcement did not score lower on the Depression Scale of the MAACL or on the BDI than the controls, and their anagram performance was not better than that of the control group. Also, subjects given a low rate of reinforcement did not score higher on the Depression Scale of the MAACL or on the BDI than the controls, and their anagram performance was not worse than that of the controls. Furthermore, the subjects in the negative self-evaluation group did differ on the three MAACL measures from the controls.

Hyposthesis (1) based on Beck's theory was not supported. Subjects given positive self-evaluative statements did not score lower on the Depression Scale of the MAACL or on the BDI than the controls, and their anagram performance was not better than that of the controls. However, hypothesis (2) was partially supported: Subjects given negative self-evaluative statements did score higher on the Depression Scale of the MAACL than the controls, but their BDI scores were not higher and their anagram performance was not worse than that of the controls. The discrepency between the MAACL and the BDI results may be a reflection of the experimental procedure which was used. The BDI measures long lasting mood state changes, while the MAACL measures a momentary affective state. The MAACL measures are likely to be more sensitive than the BDI to the experimental manipulations as used in the study. Hypothesis (3)

was supported. Subjects in the high and low rate of reinforcement groups did not differ on the dependent measures from the controls. The fact that the statements used as a test of Beck's theory were not characterized by somatic states but were of a self-evaluative nature may explain the limited support for Beck's theory (Frost, Graf, and Becker, 1979).

Neither a behavioral manipulation based on Lewinsohn's theory nor a cognitive manipulation based on Beck's theory influenced significantly the performance on the anagram task. No significant results were obtained by means of the one-way analysis of variance tests or Dunnett's (1955) test for any of the behavioral measures.

The results suggest that female college students are affected more by negative self-evaluative statements than they are by positive self-evaluative statements. These statements were used to induce negative self-esteem and positive self-esteem. It appears that college students are affected negatively by a lowering of their self-esteem, but are not as affected positively by a raising of their self-esteem. This finding may be the result of a ceiling effect. The subjects included in the study were those who scored 8 or lower on the BDI. Thus the majority of the subjects scored below the population mean. When the subjects were subjected to a procedure aimed at lowering their self-esteem they had more room to shift in the direction of depression, because originally they were situated close to the elation end of the elation-depression continuum. On the other hand, when they wer subjected to a procedure aimed at raising their self-esteem they did not have much room to move towards the elation end of the continuum, since they were already relatively close to it.

The results do not support Lewinsohn's theory of depression and

are in conflict with the results of a study reported by Wener and Rehm (1975). The task and procedure used in their study were very similar to that used with the low rate of reinforcement and the high rate of reinforcement groups in the present study. Wener and Rehm (1975) found that a low rate of reinforcement resulted in more depressive behavior as measured by the MAACL, responce latencies, and self-confidence ratings. The difference between their results and the results of the present study may be due in part to the different subjects used in the two studies. In Wener and Rehm's (1975) study the subjects were female nursing students and female Catholic high school students whereas in the present study the subjects were female undergraduate students. These different groups of subjects may differ in their susceptibility to the type of experimental manipulation given. Furthermore, the stimulus words were presented differently in the two studies and the subject was reinforced differently. In Wener and Rehm's (1975) study the stimulus words were presented through a slot in a wooden divider by a memory drum. Also, a light which was mounted on the divider went on as an indication that the subject had given the "correct" answer. In the present study the stimulus words were presented to the subject, one at a time, on a card and a "correct" response was reinforced by the experimenter saying "correct". It is possible that these differences in procedure contributed to the different results obtained in the two studies.

However, within the scope of the present study, Lewinsohn's theory was not supported by any of the dependent measures. Lewinsohn argues for a behavior to cognition direction of influence. However, in the present study a behavioral manipulation resulted in neither cognitive nor behavioral changes. Beck argues for a cognition to behavior direction

of influence. However, in the present study a cognitive manipulation resulted in cognitive changes, but not in behavioral changes. Thus Beck's theory received only partial support. The results suggest that in regards to the treatment of depression, a cognitive therapy program might be more effective than a behavioral therapy program. This inference is in accord with the study by Shaw (1977) who found that a cognitive modification resulted in significantly fewer depressive symptoms after treatment than all other groups. However, behavior modification and nondirective procedures were more effective than no treatment based on the self-report data. Therapeutic results are not necessarily obtained because the treatment chosen was effective in influencing specific target behavior. Often studies only indicate that the depression level was affected as predicted. In a study by Zeiss, Lewinsohn and Munoz (1979) depressed outpatients received a treatment focusing on either interpersonal skills, cognitions, or pleasant events. All treatment modalities significantly alleviated depression, but no treatment modality had specific impact on the variables most relevant to its treatment format.

It should be empasized that the present study is an analogue study and its implications for the symptomatology, etiology, and treatment of depression should be treated accordingly. Any students who became "depressed" after the experimental procedure are generally experiencing only depressed mood or mild depression which is not of clinical proportions. It might be argued that these "depressed" students are qualitatively different from depressed patients. However, a number of facts weaken such an argument. In an analogue study carried out by Klein and Seligman (1976) using college students the mean BDI scores of the depressed subjects were 13.63 (SD = 4.00) and 12.92 (SD = 5.32), whereas Beck (1967) and Metcalfe

and Goldman (1965) reported only slightly higher mean scores for mildly depressed patients (i.e. 18.7 (SD = 10.2) and 14.3 (SD = 8.3), respectively). Furthermore they reported correlations between BDI scores and clinically rated severity of depression of .65, .67, and .61 in three patient populations involving more than 1,000 patients. In the present study the negative self-evaluative statements group, based on Beck's theory of depression, had a mean BDI score of 12.63 (SD = 18.24). Miller's (1975) review of psychological deficit in depression showed that deficit depends largely on severity, rather than type of depression, and that depressed subjects in normal populations are generally characterized by deficits similar in nature, but smaller in degree, to those of depressed patients. Thus it seems reasonable to generalize from the results of the present study to the psychopathology of depression.

Table 1

Experimental Design

Group	Treatment Phase	Test Phase
PS	Positive Statements	BDI, MAACL, Anagrams
NS	Negative Statements	BDI, MAACL, Anagrams
HR	High Reinforcement	BDI, MAACL, Anagrams
LR	Low Reinforcement	BDI, MAACL, Anagrams
C	No Treatment	BDI, MAACL, Anagrams

Note. Abbreviations are: PS = positive statements, NS = negative statements, HR = high rate of reinforcement, LR = low rate of reinforcement, C = Control, BDI = Beck Depression Inventory, MAACL = Multiple Affect Adjective Check List.

Table 2

Analysis of Variance Summary Table

for the Self-Esteem Ratings

Source	SS	df	MS	F
Treatments	22.57	2	11.29	8.89
Within Treatments	26.67	21	1.27	
Total	49.24	23		

Table 3

Mean Self-Esteem Rating

and Standard Deviations

	Group		
	C	PS	NS
M	4.80	6.00	3.63
SD	1.06	1.07	1.30

Note. Abbreviations are: PS = positive statements, NS = negative statements, C = Control.

Table 4

Analysis of Variance Summary Table

for the BDI Initial Scores

Source	SS	df	MS	F
Treatment	28.12	4	7.03	1.02
Within Treatments	241.48	35	6.90	
Total	269.60	39		

Table 5

Analysis of Variance Summary Table

for the BDI Post Treatment Scores

Source	SS	df	MS	F
Treatments	690.66	4	172.67	2.43
Within Treatments	2485.11	35	71.00	
Total	3175.77	39		

Table 6

Analysis of Variance Summary Table

for the BDI Difference Scores

Source	SS	df	MS	F
Treatments	583.40	4	145.85	1.90
Within Treatments	2681.37	35	76.61	
Total	3264.77	39		

Table 7

Mean Beck Depression Inventory

Scores and Standard Deviations

	Group				
	C	PS	NS	HR	LR
Initial BDI	3.88	3.63	4.63	4.88	2.50
	(1.89)	(2.26)	(3.20)	(2.64)	(2.93)
Post BDI	4.38	1.25	12.63	2.63	2.00
	(3.58)	(1.49)	(18.24)	(1.60)	(2.20)
Difference BDI	-0.50	2.38	-8.00	2.25	0.50
	(2.73)	(2.26)	(19.09)	(1.75)	(1.77)

Note. Standard deviations are in parentheses. Abbreviations are: C = Control, PS = positive statements, NS = negative statements, HR = high rate of reinforcement, LR = low rate of reinforcement.

Table 8

Analysis of Variance Summary Table

for the Anxiety Score of the MAACL

Source	SS	df	MS	F
Treatments	342.52	4	85.63	5.54
Within Treatments	540.98	35	15.46	
Total	883.50	39		

Table 9

Analysis of Variance Summary Table

for the Depression Score of the MAACL

Source	SS	df	MS	F
Treatments	887.12	4	221.78	3.82
Within Treatments	2031.98	35	58.06	
Total	2919.10	39		

Table 10

Analysis of Variance Summary Table

for the Hostility Score of the MAACL

Source	SS	df	MS	F
Treatments	257.66	4	64.42	8.07
Within Treatments	278.24	35	7.95	
Total	535.90	39		

Table 11

Mean Multiple Affect Adjective Check List

Scores and Standard Deviations

	Group				
	C	PS	NS	HR	LR
Anxiety	5.13	1.75	10.88	5.63	5.38
	(5.11)	(2.55)	(4.26)	(4.21)	(2.97)
Depression	8.75	5.63	19.63	9.38	10.88
	(5.78)	(6.59)	(10.97)	(6.93)	(6.73)
Hostility	4.33	4.00	11.13	6.50	6.25
	(1.41)	(2.83)	(3.94)	(2.56)	(2.76)

Note. Standard deviations are in parentheses. Abbreviations are: C = Control, PS = positive statements, NS = negative statements, HR = high rate of reinforcement, LR = low rate of reinforcement.

Table 12

Analysis of Variance Summary Table

for the Mean Response Latency Measure

Source	SS	df	MS	F
Treatments	1164.88	4	291.22	0.78
Within Treatments	13084.30	35	373.84	
Total	14249.18	39		

Table 13

Analysis of Variance Summary Table

for the Trials to Criterion Measure

Source	SS	df	MS	F
Treatments	89.60	4	22.40	0.45
Within Treatments	1723.37	35	49.24	
Total	1812.97	39		

Table 14

Analysis of Variance Summary Table

for the Number of Failures Measure

Source	SS	df	MS	F
Treatments	33.86	4	8.47	0.51
Within Treatments	579.11	35	16.55	
Total	612.97	39		

Table 15

Mean Anagram Task Scores and Standard Deviations

	Group				
	C	PS	NS	HR	LR
Response Latency	56.11 (18.96)	57.93 (21.67)	50.33 (20.18)	42.63 (16.50)	49.76 (18.31)
Trials to Criterion	18.88 (4.16)	16.25 (7.69)	16.00 (7.11)	14.25 (8.05)	15.75 (7.38)
No. of Failures	7.88 (3.83)	7.88 (4.61)	7.25 (4.23)	5.50 (3.66)	6.38 (3.93)

Note. Standard deviations are in parentheses. Abbreviations are: C = Control, PS = positive statements, NS = negative statements, HR = high rate of reinforcement, LR = low rate of reinforcement.

References

Beck, A. T. Thinking and depression: 1. Idiosyncratic content and cognitive distortions. Archives of General Psychiatry, 1963, 9, 324-335.

Beck, A. T. Depression: Clinical, Experimental, and Theoretical Aspects. New York: Hoeber, 1967.

Beck, A. T. The phenomena of depression: A syntheses. In D. Offer & D. X. Freedman (Eds.), Modern Psychiatry and Clinical Research. New York: Basic Books, Inc., 1972.

Beck, T. A. The development of depression: A cognitive model. In R. J. Friedman, & M. M. Katz (Eds.), The Psychology of Depression: Contemporary Theory and Research. Washington, D. C.: Hemisphere Publishing Corp., 1974.

Bilodeau, E. A. & Howell, D. C. Free Association Norms: By Discrete and Continued Methods. Washington, D. C. : Department of the Navy, Office of Naval Research, 1965.

Blaney, P. H. Contemporary theories of depression: Critique and comparison. Journal of Abnormal Psychology, 1977. 86. 203-223.

Bumberry, W., Oliver, J. M., & McClure, J. N. Validation of the Beck Depression Inventory in a university population using psychiatric estimate as the criterion. Journal of Consulting and Clinical Psychology, 1978, 46, 150-155.

Coleman, R. E. Manipulation of self-esteem as a determinant of mood of elated and depressed women. Journal of Abnormal Psychology, 1975, 84, 693-700.

Dunnett, C. W. A multiple comparison procedure for comparing several treatments with a control. Journal of the American Statistical

Association, 1955, 50, 1096-1121.

Flippo, J. R. & Lewinsohn, P. M. Effects of failure on the self-esteem of depressed and nondepressed subjects. Journal of Consulting and Clinical Psychology, 1971, 36, 151.

Frost, R. C., Graf, M., & Becker, J. Self-devaluation and depressed mood. Journal of Consulting and Clinical Psychology, 1979, 47, 958-962.

Hale, W. D. & Strickland, B. R. Induction of mood states and their effect on cognitive and social behaviors. Journal of Consulting and Clinical Psychology, 1976, 44, 155.

Hammen, C. I. & Glass, D. R., Jr. Depression, activity, and evaluation of reinforcement, Journal of Abnormal Psychology, 1975, 84, 718-721.

Hiroto, D. S. & Seligman, M. E. P. Generality of learned helplessness in man. Journal of Personality and Social Psychology, 1975, 31, 311-327.

Klein, D. C. & Seligman, M. E. P. Reversal of performance deficits and perceptual deficits in learned helplessness and depression. Journal of Abnormal Psychology, 85, 11-26.

Lewinsohn, P. M. Clinical and theoretical aspects of depression. In K. S. Calhoun, H. E. Adams, & K. M. Mitchell (Eds.), Innovative Treatment Methods of Psychopathology, New York: Wiley, 1974.

Lewinsohn, P. M. Engagement in pleasant activities and depression level. Journal of Abnormal Psychology, 1975, 84, 729-731.

Lewinsohn, P. M., Weinstein, M. S., & Shaw, D. A. Depression: A clinical research approach. In R. D. Rubin & C. M. Franks (Eds.), Advances in Behavior Therapy, 1968, New York: Academic Press, 1969.

Libet, J. M. & Lewinsohn, P. M. Concept of social skill with special

reference to the behavior of depressed persons. Journal of Consulting and Clinical Psyschology, 1973, 40, 304-312.

Lishman, W. A. Selective factors in memory: II. Affective disorder. Psychological Medicine, 1972, 2, 248-253.

Lloyd, G. G. & Lishman, W. A. Effect of depression on the speed of recall of pleasant and unpleasant experiences. Psychological Medicine, 1975 5, 173-180.

Loeb, A., Beck, A. T., & Diggory, J. Differential effects of success and failure on depressed and nondepressed patients. Journal of Nervous and Mental Disease, 1971, 152, 106-114.

Ludwig, L. D. Elation-depression and skill as determinants of desire for excitement. Journal of Personality, 1975, 43, 1-22.

Metcalfe, M. & Goldman, E. Validation of an inventory for measuring depression. British Journal of Psychiatry, 1965, 111, 240-242.

Miller, W. R. Psychological deficit in depression. Psychological Bulletin, 1975, 82, 238-260.

Miller, W. R. & Seligman, M. E. P. Depression and perception of reinforcement. Journal of Abnormal Psychology, 1973, 82, 62-73.

Mischel, W., Ebbesen, E. B., & Zeiss, A. R. Selective attention to the self: Situational and dispositional determinants. Journal of Personality and Social Psychology, 1973, 27, 129-142.

Nelson, R. E. & Craighead, W. E. Selective recall of positive and negative feedback, self-control behaviors, and depression. Journal of Abnormal Psychology, 1977, 36, 379-388.

Palermo, D. S. & Jenkins, J. J. Word Association Norms: Grade School Through College. Minneapolis: University of Minnesota Press, 1963.

Rapaport, D., Gill, M. M., & Schafer, R. Diagnostic Psychological Test-

ing. London: University of London Press, 1946.

Rehm, L. P. Mood, pleasant events, and unpleasant events: Two pilot studies. Journal of Consulting and Clinical Psychology, 1978, 46, 854-859.

Roth, S. & Kubal, L. Tasks of differing importance: Facilitation and learned helplessness. Journal of Personality and Social Psychology, 1975, 32, 680-691.

Shaw, B. F. Comparison of cognitive therapy and behavior therapy in the treatment of depression. Journal of Consulting and Clinical Psychology, 1977, 45, 543-551.

Strickland, B. R., Hale, W. D., & Anderson, L. K. Effect of induced mood states on activity and self-reported affect. Journal of Consulting and Clinical Psychology, 1975, 43, 587.

Teasdale, J. D., & Rezin, V. The effects of reducing frequency of negative thoughts on the mood of depressed patients- tests of a cognitive model of depression. Journal of Social and Clinical Psychology, 1978, 17, 65-74.

Turner, R. W., Ward, M. F., & Turner, D. J. Behavioral treatment for depression: An evaluation of therapuetic components. Journal of Clinical Psychology, 1979, 35, 166-175.

Velten, E., Jr. A laboratory task for induction of meed states. Behavior Research and Therapy, 1968, 6, 473-482.

Wener, A. E. & Rehm, L. P. Depressive affect: A test of behavioral hypotheses. Journal of Abnormal Psychology, 1975, 84, 221-227.

Zeiss, A. M., Lewinsohn, P. M., & Munoz, R. F. Nonspecific improvement effects in depression using interpersonal skills training, pleasant activity schedules, or cognitive training. Journal of Consulting

ing and Clinical Psychology, 1979, 47, 427-439.

Zuckerman, M., Lubin, B., & Robins, S. Validation of the Multiple Affect Check List in clinical situations. Journal of Consulting Psychology, 1965, 29, 594.

Appendix 1

List of Self-Evaluative Statements

A. Positive Self-Evaluative Statements

I AM GOOD-NATURED

I LEARN FROM MY MISTAKES

I EXPRESS MYSELF WELL

I AM HONEST

I LIKE MYSELF

I AM RESOURCEFUL

I AM A RESPONSIBLE ADULT

I MAKE GOOD USE OF MY TIME

I AM A GENEROUS PERSON

I AM A CONSIDERATE PERSON

I AM NOT EASILY DISCOURAGED

I DESERVE THE PRAISE I GET

I HAVE A GOOD MEMORY

I AM SURROUNDED BY PEOPLE WHO CARE ABOUT ME

I AM ARTISTIC

I GET ALONG WELL WITH PEOPLE

I AM A CALM, COLLECTED PERSON

I AM OFTEN PLEASED WITH MYSELF

I AM BRAVE

I HAVE NO TROUBLE MAKING MYSELF UNDERSTOOD

I AM VERY SOCIABLE

I LOOK FORWARD TO THE FUTURE

I AM A WINNER

I AM CONFIDENT

I AM WITTY

I HAVE MANY ACCOMPLISHMENTS

I AM A RELAXED EASY-GOING PERSON

I AM AN INTERESTING PERSON

I AM AS SMART AS ANYBODY ELSE

I HAVE MEANINGFUL THINGS TO SAY

I AM TALENTED IN MANY WAYS

I FEEL GOOD ABOUT MYSELF

I AM A MATURE, WELL-ADJUSTED PERSON

I KNOW HOW TO HAVE A GOOD TIME

I AM USUALLY SATISFIED WITH MY PERFORMANCE

I AM A LEADER

I AM A GOOD STUDENT

I HAVE GOOD JUDGEMENT

I AM DEPENDABLE

I AM IMPORTANT

I AM ATTRACTIVE

I AM INTELLIGENT

I HAVE MANY CLOSE FRIENDS

I AM OPTIMISTIC

I AM POISED

I AM TOLERANT

I AM RATIONAL

I FEEL THAT I HAVE A NUMBER OF GOOD QUALITIES

I KNOW WHERE I AM GOING AND WHAT IS EXPECTED OF ME

I HAVE A VERY GOOD OPINION OF MYSELF

ON THE WHOLE, I AM SATISFIED WITH MYSELF

I TAKE A POSITIVE ATTITUDE TOWARD MYSELF

I AM FULL OF ENERGY AND READY TO TACKLE ANYTHING

I AM A LIKEABLE PERSON

I AM A HIGHLY COMPETENT PERSON

I AM A SUCCESSFUL INDIVIDUAL

I AM POWERFUL

I HAVE PRIDE IN MY MANY ACHIEVEMENTS

I AM BASICALLY A WORTHWHILE HUMAN BEING

I LEAD A RICH, FULL LIFE

B. Negative Self-Evaluative Statements

I AM OFTEN INDECISIVE

I AM OFTEN MISUNDERSTOOD

I AM LISTLESS

I RECEIVE LITTLE PRAISE FROM OTHERS

I AM EASILY DISCOURAGED

I LACK SELF-CONFIDENCE

I DON'T HAVE ANY SPECIAL TALENTS

I AM A LONER

I AM USUALLY NOT SATISFIED WITH MY PERFORMANCE

I LACK MOTIVATION

I AM INCONSIDERATE

I AM NOT A VERY GENEROUS PERSON

I HAVE TROUBLE GETTING ALONG WITH OTHERS

I HAVE A POOR MEMORY

I SPEND MY MONEY CARELESSLY

I AM IRRESPONSIBLE

I WASTE A LOT OF MY TIME

I LACK INITIATIVE

I HAVE DIFFICULTY FORMING CLOSE RELATIONSHIPS

I AM OFTEN DISAPPOINTED IN MYSELF

I AM DISHONEST

I AM A COWARD

I MAKE THE SAME MISTAKES OVER AND OVER

I CAN'T SEEM TO DO ANYTHING RIGHT

I CAN'T DO THINGS I SHOULD BE ABLE TO DO

I DON'T EXPECT VERY MUCH OF MYSELF

I AM A LOSER

I AM OFTEN DISGUSTED WITH MYSELF

I AM NOT VERY SUCCESSFUL

I AM NOT AS GOOD LOOKING AS MOST WOMEN

I AM NOT AS SMART AS MOST PEOPLE

I DON'T DESERVE PEOPLE'S RESPECT

I AM NOT A VERY NICE PERSON

I AM GENERALLY LETHARGIC

I AM OVERSENSITIVE

I AM A BORING PERSON

I AM A NOBODY

I AM A FOLLOWER RATHER THAN A LEADER

I AM A POOR STUDENT

I AM A TIMID PERSON

I AM UNDEPENDABLE

I AM UNIMPORTANT

I AM PESSIMISTIC

I AM NOT A LIKEABLE PERSON

I AM UNRELIABLE

I AM AN INFERIOR PERSON

I HAVE LITTLE RESPECT FOR MYSELF

I HAVE A VERY POOR OPINION OF MYSELF

AT TIMES I THINK I AM NO GOOD AT ALL

I FEEL I DO NOT HAVE MUCH TO BE PROUD OF

I AM INCOMPETENT

I CERTAINLY FEEL USELESS AT TIMES

THERE IS NO ONE I CAN REALLY CALL MY FRIEND

I CAN'T SEEM TO DO ANYTHING RIGHT

I AM NOT VERY GOOD AT ANYTHING

I HAVE AN EMPTY LIFE

I AM UGLY

I AM STUPID

I AM A FAILURE

I AM A WORTHLESS HUMAN BEING

Appendix 2

List of Words Used in the Reinforcement Task

AFRAID	CHEESE	HAIR	MY	SOAP
ALTHOUGH	CHILD	HAND	NOISE	SOLDIER
AS	CITIZEN	HARD	OCEAN	SON
BABY	CLEARER	HEAD	OH	SQUARE
BATH	CLOSER	HIGH	PAPER	STEM
BEAUTIFUL	COLD	HOPE	PLAYING	STOMACH
BECAUSE	COLOR	JUSTICE	QUIETLY	STREAM
BEEF	COMFORT	KID	RED	STREET
BITE	DARK	KING	RELIGION	SWIFT
BLACK	DEEP	KNIFE	RIVER	TABLE
BLOSSOM	DIRT	LETTUCE	RUNNING	THE
BLUE	DUMB	LIGHT	SALTY	THIRSTY
BOY	EARTH	LONG	SCARED	TRAIN
BRAVE	FARM	MAN	SHEEP	VEGETABLE
BRIGHT	FRIEND	MEAT	SHORT	WHAT
BUTTERFLY	GET	MEMORY	SCISSORS	WHISTLE
CABBAGE	GIRL	MILK	SILK	WISH
CAKE	GO	MOTH	SIT	WOMAN
CARRY	GREEN	MUSIC	SLOW	WORKING
CHAIR	GROUND	MUTTON	SMOOTH	YELLOW

Appendix 3

List of Anagrams Used in the Study

Anagrams	Solutions
RSUEN	NURSE
ERLKC	CLERK
DEOLM	MODEL
ILOYD	DOILY
UNODB	BOUND
MPEOT	TEMPO
ANITG	GIANT
PTMYE	EMPTY
BROAC	COBRA
TIAOP	PATIO
GOANW	WAGON
ONRYC	CRONY
ACEHB	BEACH
TOANB	BATON
AKHES	SHAKE
UNATJ	JAUNT
ULATF	FAULT
YOANR	RAYON
ACCHR	ROACH
ORLYG	GLORY

Appendix 4

Debriefing Instructions

I am sure you would like to be briefed on the purpose of this experiment. There are many different theories of and approaches to the study of depression. You have participated in an experimental study in which a cognitive view of depressive affect was compared with a behavioral view. To test the cognitive view of depression some subjects were given a set of negative self-evaluative statements to read while other subjects were given a set of positive self-evaluative statements to read. The negative statements should result in lowering the person's self-esteem, whereas the positive statements should result in raising the person's self-esteem. It is hypothesized that this lowering of self-esteem will result in a mild form of depressive affect.

To test the behavioral view of depression some subjects were given a pseudo-social intelligence task, that is, they were told that the experiment would be a study of that specific part of social intelligence called "interpersonal empathy", the ablility to know what others are thinking and feeling. These subjects were presented with words on index cards and asked to say aloud the word which most people would associate to the presented word. The subjects were told that if their response was correct the experimenter would say "correct". In fact these subjects were given feedback according to a predetermined schedule thereby enabling the experimenter to manipulate the rate of reinforcement as an independent variable. Some of the subjects were given a high rate of positive reinforcement (i.e. reinforced as correct on four out of every five trials) whereas other subjects were given a low rate of positive reinforcement (i.e. reinforced as correct on only one of every five trials).

According to the behavioral theory of depression this low rate of positive reinforcement, especially in the area of social skill, will result in a mild form of depressive behavior. Another group of subjects, those in the control group, has received no pretreatment task but has proceeded directly to the test phase.

In the test phase all subjects were given an adjectve sheck list, an anagrams task, a self-rating scale, and the Beck Depression Inventory. The subjects will be compared in their scores on these dependent measures to determine whether a low rate of positive reinforcement or a negative self-esteem induction results in greater "depression" and poorer anagram performance.

You were one of the subjects in this study who received..... (Stated which treatment, if any, the subject received.) Do you have any questions? (Answered any questions the subject had.) Finally, I would like to request your confidentiality about all aspects of this experiment. Any information that subjects would have beforehand concerning the nature of the tasks involved or the purpose of the study would seriously jeopardize our efforts. May we count on your confidentiality? Thank you.